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ABSTRACT

Federal funding for career and technical education (CTE) should move from a state grant program to a competitive grant approach in order to disrupt an entitlement mentality and instead support the creation of high quality CTE programs with improved student outcomes. Funds should be used to develop and expand CTE programs to begin in 9th grade and continue to postsecondary education, with 5% to conduct or support research and demonstrations of new CTE curricula, 20% to states, and 75% allocated on a competitive basis to schools. In grades 9-10, the program would focus on academic foundations in the context of careers. In the upper grades, programs might include career-themed schools, career academies located in comprehensive high schools, technical schools with career clusters, and early or middle college high schools with a career theme. At the postsecondary level, the focus would be more occupational and technical. At the secondary level, progress would be measured by aligning with the No Child Left Behind Act and by reduced high school drop out rates, increased entry into postsecondary education, and attainment of technical or occupational competencies. (SLR)

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Rigor and Relevance:

A New Vision for Career and Technical Education

A White Paper

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By Betsy Brand

April 2003

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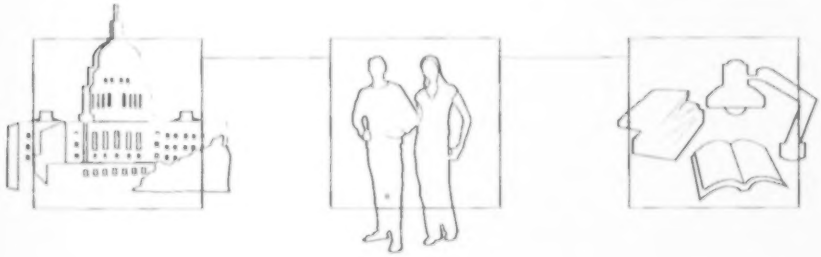

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American Youth Policy Forum

– Bridging Youth Policy, Practice and Research

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Our goal is to enable policymakers and their aides to be more effective in their professional duties and of greater service—to Congress, the Executive Branch, state legislatures, governors and national organizations—in the development, enactment, and implementation of sound policies affecting our nation's young people. We believe that knowing more about youth issues—both intellectually and experientially—will help these busy professionals to formulate better policies and perform their jobs more effectively. AYPF does not lobby or take positions on pending legislation. Rather, we work to develop better communication, greater understanding and enhanced trust among these professionals, and to create a climate that will result in constructive action for the benefit of the nation's young people and their families and communities.

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American Youth Policy Forum

April 2003

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Many people deserve thanks and acknowledgement for participating in the discussion groups that led to the development of this paper. A complete listing of the individuals who attended a meeting or provided comments on the paper is included at the end of this paper. Each person came to the discussion with an open mind, a willingness to share, and a desire to learn. Participants spoke freely and often shed their institutional identities, which resulted in a very rich dialogue. There was, at times, disagreement over very important policy issues, but that disagreement and opportunity to listen to diverse viewpoints led to a better understanding of the policy issues and the challenges and opportunities facing Career and Technical Education. In the end, it was clear that each individual was deeply committed to finding a way to make American Career and Technical Education the best it could be. At all times, whether in agreement or not, it was a pleasure to host the discussion groups.

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Betsy Brand

April 2003

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Rigor and Relevance:
A New Vision for Career and Technical Education
Executive Summary

With the Carl D. Perkins Vocational and Technical Education Act due to be reauthorized in 2003, it is appropriate to ask the question, "What should the role of the federal government in Career and Technical Education (CTE) be?" To provide one angle on this debate, the American Youth Policy Forum (AYPF) organized a series of discussion groups with a diverse range of individuals to focus on this topic. The discussion groups helped inform this paper, and while not all participants endorse all aspects of this paper, they are hopeful of a serious review of many of its contents during the reauthorization process.

The federal government has an important role to play in continuing the reform efforts already begun in CTE, yet much more can be done. By promoting a new vision for CTE, the federal government will have an impact not only on how federal dollars are spent, but also on how the bulk of the state and local funds for CTE are spent as well.

The key reason for federal involvement in CTE is economic. Changes in the economy, work, and society demand that every high school student be prepared both for careers and postsecondary education. The past division between preparation for college and preparation for work has become a false dichotomy. Every high school student must meet higher academic standards in secondary and postsecondary education and be prepared for the challenges of work, continued learning, and citizenship. But the high school experience for many students, particularly those in large, urban high schools, is very negative, and it does not prepare them for work or further learning. In addition, many students find school boring and irrelevant to their future plans.

This paper presents not only a new vision of how federal funding for CTE should be used, but also proposals about changing the way funding flows and who gets it. This paper recommends moving from a state grant program to a competitive grant approach. While nothing is more controversial and provocative than changing funding formulas, it is possible that changing the funding flow will ultimately have a larger impact on bringing about change and improvement in CTE programs than tinkering with the current grant program. Of prime importance is the disruption of the entitlement mentality that has existed in many states and school districts that have received Perkins Act funds for years. Federal funds should not be viewed as ongoing maintenance or general operating funds or for the purchase of equipment. They must be used to support activities that will lead to the creation, continued improvement, and support of high quality CTE programs of study with improved student outcomes.

As conceived in this paper, funding would be used to support the development and expansion of rigorous CTE programs of study. A CTE program of study is defined as a multi-year sequence of courses that integrate core academic knowledge with technical and occupational knowledge leading to higher levels of skill attainment over time with a unifying career theme around which to organize the curriculum. A program of study by design provides students with a pathway to postsecondary education and a career by detailing academic and occupational competencies needed for advancement and providing a series of related courses.

CTE programs of study would be comprehensively and holistically designed, beginning in the ninth grade in high school through the fourteenth year in postsecondary education. Curriculum would be

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redesigned or adapted to ensure rigor and alignment with academic standards. It would be interdisciplinary, integrated, and contextual, particularly in the upper grades. This approach places the focus of program improvement on developing rigorous programs of study, redesigning or adapting curriculum, and creating clearer pathways through high school to postsecondary education. The bulk of the funds would be used to develop the programs of study and pathways, to support professional development and planning time for teachers and faculty who will develop the programs of study and sequenced classes, and for college and career guidance and counseling. Funds would also be used to build stronger partnerships with employers to create opportunities for learning in the community and for ensuring responsiveness to the labor market and industry needs, especially for postsecondary CTE programs. Funds could not be used to purchase or maintain equipment, as the main goal is to improve teaching and learning for CTE programs.

In grades 9-10, a program of study would focus primarily on academic foundations using the context of careers to help make the core curriculum relevant and meaningful and show how academic concepts can be applied in work situations. In the upper high school grades, students would continue to take the required core curriculum, but academic and CTE teachers would collaborate so the material would include applications to the various career areas in the program of study and provide relevancy to their future plans. Programs of study could be small career-themed schools, career academies located in comprehensive high schools, technical high schools with various career clusters, or early or middle college high schools with a career theme.

The federal government has a critical role to play in providing leadership, research, and oversight. Five percent of the federal appropriation should be used at the national level for conducting or supporting research and demonstrations; developing new CTE curricula and assessments that have a national scope or are related to labor market needs; disseminating best practices that increase the capacity and quality of CTE programs; national data collection; and alignment of federal funding for CTE with other laws.

States also have a very important role to play in leading change in CTE and should receive a meaningful share, at least 20 percent, of the total appropriation. States not only will provide leadership activities but will also be managing the competitive grant process. Leadership activities would include: developing frameworks for CTE programs of study; developing coherence and alignment of curriculum with state standards; developing technical and end-of-course CTE assessments; professional development; improving college and career guidance and counseling efforts; developing employer partnerships; labor market information; evaluation of programs; and alignment of accountability systems.

The remaining 75 percent of the funding would be allocated on a competitive basis to schools, school districts, area vocational schools, and postsecondary institutions. States could determine how much to allocate to both secondary and postsecondary sectors, but grant applications between a secondary and postsecondary education partner would receive priority. Grants for up to three years in the amount of $300,000-$500,000 would be made. Some of the required elements of the grant would include: rigorous, integrated and sequenced CTE curriculum aligned with state academic and industry standards; creation of various career-themed programs of study, small schools, or early or middle college high schools; college and career guidance and counseling; pathways that help students transition and move from high school to postsecondary; and partnerships with employers and the community to ensure relevancy and validity of the program of study.

At the postsecondary level, grantees would have to meet similar requirements, but the focus of the curriculum and programs would be more occupational and technical; pathways would help students not only enter postsecondary education but remain and complete a certificate or degree pro-

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gram; stronger connections to the labor market and employer needs would be supported; and more effective links with other federal programs to ensure that needy students have access to the services to help them complete a degree would be required.

Programs at the secondary level would be measured by aligning with the No Child Left Behind Act and by reduced high school dropout rates, increased entry into postsecondary education, and attainment of technical or occupational competencies. At the postsecondary education level, programs would be held accountable for measures of entered employment, retention in employment, and earnings increase, as well as entry into further education, training, or the military, and attainment of degree or industry-recognized certificates or credentials.

CTE is a needed option for youth based on their future interests and to keep them engaged and interested in school, especially in light of the pressure from standards-based reform. The ideas contained in this paper can help form the basis for a positive, successful, rigorous, and relevant high school experience for any youth, in any high school. While the focus here has been on CTE programs of study, that concept can easily be expanded to many other disciplines and interest areas. As the country continues to discuss high school reform, CTE should be recognized for the reforms it has already brought forth and viewed as a key strategy to continue to improve the teaching and learning opportunities for America's youth and future workforce.

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Introduction

The American Youth Policy Forum (AYPF) organized a series of discussions focused on the federal role in Career and Technical Education (CTE) and the implications for the reauthorization of the Carl D. Perkins Vocational and Technical Education Act (Perkins Act). These discussions were held for a number of reasons. The needs of the workforce have continued to evolve and require higher levels of academic, technical, and employability skills; therefore, the federal role in CTE should be reviewed to ensure that it is meeting the needs of the labor market. Second, there is a growing interest in high school reform, and because the Perkins Act is one of the primary sources of funding for secondary schools, the federal contribution to CTE deserves scrutiny to determine how it contributes to improved academic learning experiences for high school students.

THE DISCUSSION GROUP

Over the past sixteen months, AYPF invited a diverse group of individuals to participate in a series of discussions on the federal role in CTE. A list of individuals who participated in at least one of these discussions or provided significant input appears at the end of this paper. The discussions helped to inform the writing of this paper, which is the sole responsibility of the American Youth Policy Forum. While not all participants endorse all aspects of this paper, they are hopeful of a serious review of many of its contents during the reauthorization process.

THE ENVIRONMENT SURROUNDING CAREER AND TECHNICAL EDUCATION

The need for higher literacy, numeracy, communication, and interpersonal skills in the workplace has grown over the past decade and will continue to grow. Economic and labor market trends that will influence the federal government's role in career and technical education include:

- The changing nature of work requires higher literacy, numeracy, and technical skill levels. Nearly half (46%) of all employers reported difficulty in hiring qualified workers in the past year and close to a third (29%) believe they will experience difficulty in hiring in the year ahead despite the slowing economy and increasing unemployment rate.[1]
- More jobs now require some postsecondary education, but not necessarily a 4-year degree.[2]
- The labor market rewards those who take four or more occupational courses in high school.[3]
- While approximately 33 percent[4] of adults receive a bachelor's degree, the remainder needs other avenues and choices to gain the technical and occupational skills and further education to be successful in the workforce.

In addition to considering economic and labor market needs, the context for federal investment in CTE, particularly with regard to secondary education programs, is also influenced by the poor performance of many American high schools. Problems at the secondary school level have been chronicled by a number of reports, such as

1 Dixon, K.A., Duke Storen, and Carle E. Van Horn. 2002. *American's Attitudes About Work, Employers and Government.* New Brunswick, NJ: John J. Heldrich Center for Workforce Development, Rutgers University.

2 U.S. Department of Commerce, U.S. Department of Education, U.S. Department of Labor, National Institute of Literacy, and the Small Business Administration. 1999. *21st Century Skills for 21st Century Jobs.* Washington, DC: U.S. Department of Commerce, etc.

3 Bishop, John and Ferran Mane. 2003. Unpublished research. Ithaca, NY: Cornell University, New York State School of Industrial and Labor Relations, and Mane, Ferran. 1998. *Trends in the Payoff to Academic and Occupation-Specific Skills: The Short and Medium Run Returns to Academic and Vocational High School Courses for Non-College Bound Youth.* Ithaca, NY: Cornell University, New York State School of Industrial and Labor Relations.

4 National Center on Educational Statistics. 2001. *Digest of Education Statistics.* Washington, DC: U.S. Department of Education.

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Breaking Ranks: Changing an American Institution of the National Association of Secondary School Principals; *High Schools of the Millennium* of the American Youth Policy Forum; *From the Margins to the Mainstream: Effective Learning Environments for Urban Youth* of Jobs for the Future; and *Raising our Sights: No High School Senior Left Behind* of the National Commission on the High School Senior Year. The federal investment in CTE must take into account the reality of the dismal state of the high school experience for many students, especially those in urban high schools. Also, the No Child Left Behind Act (NCLBA), which sets high standards for all schools and students, is prompting a new look at existing education legislation to ensure alignment with and support of the new law's goals. The federal focus on closing the achievement gap puts new pressure on programs that until now may not have been held accountable for student performance.

Education issues that impact CTE at the secondary level include:

- Dropout rates in large urban high schools can be as high as 60%, with students leaving as early as the ninth grade.
- Student performance on math, science, and English has shown almost no improvement over two decades and is mediocre compared to other developed countries.[5]
- The achievement gap is well documented.
- The structure and culture of many high schools inhibit personalized learning and allow too many students to "fall through the cracks" or get by with a smorgasbord of low-level courses.
- Many students do not see the connection between school and careers and their future and are not motivated to learn.
- Students, particularly at-risk and low-income students, often do not receive information and guidance about prerequisites and requirements for postsecondary education until too late, and they lack clear pathways to postsecondary education and careers.[6]
- The current teaching force, in too many cases, lacks high level content knowledge, including technical content, in their field or is asked to teach out of their field entirely, due to shortages in other areas.

Federal funding for CTE has always provided for a postsecondary education component; however, it has often been overshadowed by the secondary CTE programs, which receive more funding and attention. The two spheres have generally not been well-connected, but changes in education and training patterns and a better understanding of the needs of students are forcing a reexamination of how secondary and postsecondary programs relate to and support each other. A number of issues will impact the discussion of the federal role in postsecondary CTE:

- Approximately 30 percent of entering college freshmen need remediation or find that their high school graduation requirements do not align with the college entrance standards.[7]
- Many students experience "false starts" as they search for a career, and often move through postsecondary education without clear goals, or they dropout, sometimes encumbered by large student loans.
- Various federal programs that support education and training (Workforce Investment Act, Adult Education and Family Literacy Act, Temporary Assistance to Needy Families, Higher Education Act, and Perkins Act) need better alignment to provide supportive services to needy students to ensure program success.

5 National Center on Educational Statistics. 2000. *National Assessment of Educational Progress.* Washington, DC: U.S. Department of Education and National Center on Education Statistics. 1999. *Trends in International Mathematics and Science Study.* Washington, DC: U.S. Department of Education.

6 Venezia, Andrea, Michael W. Kirst and Anthony L. Antonio. 2003. *Betraying the College Dream: How Disconnected K-12 and Postsecondary Education Systems Undermine Student Aspirations.* Stanford, CA: Stanford University.

7 Ibid.

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COMPELLING REASONS FOR A CONTINUED FEDERAL PRESENCE IN CAREER AND TECHNICAL EDUCATION

Reasons for a continued federal presence in CTE were discussed. The traditional federal role in education is to lead by using the power of the "bully-pulpit," to innovate by funding strategically designed demonstrations and programs, and to share information on best practices. The federal government has an important role to play in leading efforts to continue the reform efforts in CTE to eliminate low-level vocational education that is unconnected to careers or further learning and to replace it with rigorous, relevant programs of study to help students prepare for college and careers. By promoting a new vision for CTE, the federal government will have an impact not only on how federal dollars are spent, but also on how the bulk of the state and local funds for CTE are spent as well. By promoting a message of rigor and relevance for CTE students, the federal government can push states and communities to align their programs with the vision set forth in No Child Left Behind.

In this reauthorization cycle, the federal message must be clear that it is time to replace or eliminate "old" vocational education, and that federal funds will not be used for such purposes. First and foremost, quality practices, based on well-developed and academically rigorous interventions, should form the basis for the federal investment in CTE. We can no longer continue to fund single vocational education courses with low-level academics aimed at preparing youth for low-skill jobs after high school. The federal role should be to encourage the continuation of innovation, reform, and improvement in CTE and provide support for activities needed to accomplish that goal.

A key reason for federal involvement in CTE is economic. A skilled and flexible workforce is essential to building and maintaining a strong and dynamic economy. Education, career preparation, skill development, and lifelong learning are inextricably connected to success for individuals, as well as for society at large. Education and skill acquisition in today's world requires a great deal of mutually supportive, interdependent relationships among all levels of government, as well as the private and non-profit sectors. The U.S. needs, and will continue to need, a highly skilled workforce, one with strong academic, occupational, and technical abilities. Individuals with greater skills and education have higher standards of living, and CTE helps students develop occupational and technical skills that lead to success in the labor market. A national role is also needed to coordinate curricula frameworks, assessments, and standards in high demand occupations that cross state boundaries.

Next, it should be recognized that CTE has had a long history of supporting technical and occupational standards, even before academic standards became accepted, and CTE can support and compliment the standards-based reform movement. In today's environment, students must have core academic skills to be successful in college and careers. But academic skills alone are not enough to guarantee a good career. Students also need technical, occupational, and employability skills. The past division between preparation for college and preparation for work has become a false dichotomy. The skill demands for work and postsecondary education are converging, and increasingly, there will be one set of skills needed both for success in careers and postsecondary education. The federal government can and should promote a vision of education in which all high school students take high level courses, all students are prepared to meet academic standards, and all students are prepared for college and careers.

High-quality reformed CTE programs in many parts of the country have demonstrated that CTE students can master rigorous curriculum and gain needed occupational, technical, and employability skills at the same time. Because CTE provides the opportunity for contextual and integrated learning and allows students to see how the material is applied in the real world, studies become more

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relevant to future plans, and students remain more engaged in their learning. Evaluations of CTE programs, including those with Tech Prep articulated programs, in schools and districts contribute to increased school attendance, reduced high school dropout rates, higher grades, and increased entry into postsecondary education.[8] At a time when policymakers are focused on improving student learning and increasing student engagement, CTE is one strategy to help young people connect their learning with the real world, increase their attachment to school, and transition to postsecondary education. Given the enormous dropout rates in some urban high schools, getting young people to stay in school is a major accomplishment.

Given the focus on standards-based reform, some have suggested that the current federal funding for CTE be transformed to support high school reform efforts and focus on helping high school students improve academic performance to master standardized tests. While federal funding must align with the No Child Left Behind Act and broader attempts to raise student achievement and improve high schools, the sole purpose of federal funding for CTE should not be to reform high schools. There is not nearly enough funding allocated to CTE programs to address the kinds of large-scale changes needed at the secondary level to close the achievement gap. Also, preparing students for careers and lifelong learning remains a worthy goal of high schools, and federal support for career-oriented learning is still needed.

Reformed CTE programs have actually been leading efforts in many communities to change their high schools and should be supported to continue these efforts. CTE can and is being used to restructure high schools into smaller, career-themed learning programs, is resulting in students taking more rigorous coursework, and is helping students transition from secondary to postsecondary education through articulated pathways. There should be recognition of how CTE has led to many reformed high schools, whether it is through the High Schools That Work Initiative, Tech Prep, or career academies.

Current high school reform efforts share some common themes – themes that a federal investment strategy in CTE can easily support and contribute to. Common strategies to improve learning for high school-aged learners rely on:[9]

- using more personalized and student-focused learning opportunities,
- rigorous, integrated curriculum,
- supports for all students, including guidance and college and career exploration,
- making learning relevant by linking it to careers or other themes (like the arts),
- providing various learning methodologies to meet multiple learning styles,
- providing choices and options for teens based on their interests and future plans,
- using the community (employers) for learning, and
- helping students plan for and advance from secondary to postsecondary education in a more thoughtful and planned manner.

Programs that have these characteristics, whether they are CTE, service-learning, small learning communities, or the International Baccalaureate program, seem to be more successful than non-focused, general curriculum options. CTE can be one strategy of a range of high quality learning options for high school-aged students in every community.

CTE, with its limited federal funding, cannot carry the whole agenda of high school reform, but it can

8 Krile, Donna J. & Penelope Parmer. *2002 Tech Prep: Pathways to Success? The Performance of Tech Prep and Non-Tech Prep Students At A Midwestern Community College.* Dayton, OH: Sinclair Community College and Hughes, Katherine L., Thomas R. Bailey, & Melinda Mechur Karp. 2002. *School-to-Work: Making a Difference in Education.* Bloomington, IN: Phi Delta Kappan.

9 Various groups, including the American Youth Policy Forum, Jobs for the Future, the National Association of Secondary School Principals, and several foundations, including the Carnegie Corporation of New York and the Bill and Melinda Gates Foundation, have very similar approaches to the essential elements of a successful high school experience.

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contribute mightily to these efforts, all the while maintaining and building upon its traditional emphasis on career preparation.

Fourth, CTE can support efforts to increase connections between secondary and postsecondary education and increase the numbers of students pursuing postsecondary studies. Programs like Tech Prep that provide for sequenced series of courses from high school to postsecondary education have helped increase the number of students attending postsecondary education.[10] Yet it remains a significant challenge to increase the college going rates for certain groups of students, particularly low-income and minority students. By creating better defined and articulated pathways from high school to college and providing earlier and more comprehensive guidance and counseling, students can better plan for their future. CTE pathways from high school to college, like the Tech Prep program, have been an important reform and need to be continued and expanded in various ways.

There are a number of more specific reasons why it is appropriate for federal involvement in CTE programs:

- Developing a skilled workforce is an activity that does not recognize state or regional boundaries. For that reason, it is important to have a long-term commitment and national role in preparing the workforce for the constantly changing global economy. The federal government can help states and regional labor markets develop programs and curricula frameworks that are responsive to industry needs and build upon existing industry skill standards. In particular, creating partnerships between secondary and postsecondary education institutions and employers to meet regional labor market demands is a critical need.

- The federal government should look at how federal programs align and support each other and remove barriers to coordination and collaboration at the regional, state, and local levels. The federal government has a role to ensure that funding for secondary and postsecondary CTE is aligned with various other federal investments such as No Child Left Behind, the Workforce Investment Act, Adult Education and Family Literacy Act, Temporary Assistance to Needy Families, Individuals with Disabilities Education Act, and Higher Education Act including student aid, TRIO and Gear-Up, particularly as these programs affect special needs populations. Because various groups (disabled, minority, limited English proficient, and low-performing students) have difficulties moving through the preK-16/adult educational system, federal programs should promote and emphasize developing well-defined and rigorous career pathways and programs of study leading to careers and further education and training for needy youth and young adults. The federal government can also lead the way in helping develop information systems to track the path, progress, and outcomes of individuals through these programs. Programs should be coordinated to ensure necessary supports (e.g. student supports, counseling, financial assistance, child care, etc.) at different transition points to meet the needs of the various populations.

- The federal government has economies of scale in research, evaluation, and development that states and communities are simply unable to match. The federal investment can help balance out the uneven investment made by states and help states avoid reinventing the wheel or starting from scratch. Given the amount of development work needed for new curricula, assessments, and instruction, alignment of these programs with state academic and industry standards, professional development, and extra resources for special needs students, this becomes a daunting challenge for many states, school districts, and postsecondary institutions. Sharing research, what works, and best

10 Jurich, Sonia & Steve Estes. 2000. *Raising Academic Achievement: A Study of 20 Successful Programs*. Washington, DC: American Youth Policy Forum.

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practices at the federal level is a critical strategy for improving the field and building capacity.

In summary, there are numerous compelling reasons for a continued federal presence in support of Career and Technical Education.

A NEW VISION FOR CAREER AND TECHNICAL EDUCATION

There are numerous strategies to help young people become successful learners and employees. Communities should offer various options and choices to meet the needs of their youth. If we know that certain elements, such as academic rigor, high expectations, career and college exploration, supportive and individualized guidance, exposure to the broad world of work and the community, and pathways to further learning, translate to success, then each option should contain those elements. The traditional college prep curriculum has worked well for a small group of young people for many years because it generally contains the elements listed above. Other strategies, like creating small or personalized learning communities, connecting education to service in the community, alternative education programs for youth who need settings outside of a high school, and CTE are other options. The federal investment in CTE should focus on the ongoing improvement and replication of high quality secondary and postsecondary CTE programs that contain the elements of success listed above. A description of these ideas will follow.

Creating Rigorous, Career-themed Programs of Study in High School with Pathways to Postsecondary Education and Careers

Every student leaving high school should possess interdisciplinary knowledge – consisting of academic, technical, occupational, employability, civic, and social skills – that enable him or her to pursue and advance in postsecondary education or a career and participate meaningfully in the workplace, society, and as a family member. To help bring this about, federal funding would be used to develop and build the capacity of states, school districts, and schools to offer and support high quality CTE programs of study.

A CTE program of study is defined as a multi-year sequence of courses that integrate core academic knowledge with technical and occupational knowledge leading to higher levels of skill attainment over time with a unifying theme around which to organize the curriculum. A program of study by design provides students with a pathway to postsecondary education and a career by detailing academic and occupational competencies needed for advancement and providing a series of related courses.

Programs of study can take several forms and resemble career clusters, career academies, tech prep programs, small learning communities, or

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small schools. A technical high school that offers various career-themed programs is an example of how programs of study can be provided. Another example would be one or more free-standing career academies located within a comprehensive high school. Free-standing small schools with a career theme are another possibility. Comprehensively designed programs of study begin in high school in ninth grade and have seamless transitions to a minimum of two years of postsecondary study resulting in a recognized industry certificate and/or a degree. The career

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field or area serves as a unifying theme in developing programs of study between secondary and postsecondary education. Career-themed programs of study would include opportunities for students to experience their career field first hand, through work with employers or other organizations in the community. A program of study would include early and ongoing college and career awareness and exploration to help guide career and college choices. The program of study model could also easily be adapted for non-career themes, such as the performing arts or math/science magnet.

A CTE program of study would allow a high school to organize itself into smaller, more autonomous units that would also have the benefit of providing a more personalized learning experience for students and provide a sense of identity and connection to other students and adults, very much along the lines of the small schools movement.

Secondary students in CTE programs of study would take a core academic curriculum (strong in literacy development, numeracy, science, and social sciences), along with a concentration of electives in a broad career area. Programs of study would allow students to not only gain the core skills needed to meet high standards, but also explore various careers, develop employability and occupational skills, and learn in context. In the lower high school grades (9-10), a program of study would focus primarily on academic foundations using the context of careers to help make the core curriculum relevant and meaningful and to show how academic concepts can be applied in work situations. Students in the early high school years would be adequately exposed to both career and college awareness and exploration so that they make informed decisions and know what courses to take in high school to prepare for college. Pathways would be clearly described and understood by students, parents, teachers, and counselors. CTE students would be required to take any high school exit exams (common at the end of tenth grade) that are part of the state accountability system.

In the upper high school grades (11-12), students would continue to take the required core curriculum, but academic and CTE teachers would collaborate so the material would include applications to the various career area in the program of study, such as health, marketing/business, or manufacturing technology, to engage students and provide relevancy to their future plans. CTE curriculum would be integrated, helping students to earn certain required math, science, history, or English credits through specially-designed technical or occupational courses. Upper-level courses would be developed with input from postsecondary educators to ensure that curriculum is sequenced, non-duplicative and that end-of-course standards match college entrance requirements. Students with the desire or ability could take advanced courses or courses for college credit while in high school, allowing them to complete their postsecondary education degree or certificate in a shorter period of time. Upper level high school students would also have opportunities to learn more about careers and the working world, as well as options for internships, apprenticeships, work experiences, or service-learning. Employers would validate and endorse the program of study as well as serve as mentors and provide internship experiences.

While a four-year sequence in high school is the baseline for a program of study, flexibility needs to be incorporated. If appropriately prepared, students could progress at faster rates by participating in dual enrollment or early or middle college high schools that allow students to obtain a high school diploma and an associate's degree in four years or take a longer time to complete a program, such as students at Aviation High School in New York City that need five years to complete the FAA certifications and earn college credits. Five-year high school programs may be needed to accommodate learners that may need extra assistance or that come to high school behind grade level. In addition, flexibility needs to be built in that allows students to change their choice of career area. But as long as all students in the early

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high school grades take a program based on core academic skills, this should allow such transfers to be routine.

Creating programs of study will, in many cases, require that curriculum be newly created or adapted from an existing program. The state has an important role to play in helping to identify broad career pathways, provide curricular frameworks, and develop integrated standards to support them, based on interest in the career area or labor market needs. At the local level, teachers at both secondary and postsecondary education levels need to work together to develop integrated curriculum that would meet local needs. Teachers also need planning time together to develop integrated, interdisciplinary curriculum, melding theory and practice. Some CTE teachers would need to enhance their content knowledge; some teachers of academic disciplines would need to understand how knowledge is applied and used in the workplace in order to develop this integrated curriculum within the program of study. Both academic and technical teachers may need professional development to better understand how contextual teaching and learning can be used as a tool for dealing with students with multiple learning styles. Changes to CTE as an enterprise will demand changes and new approaches both in teacher preparation and professional development programs. Closer alignment with the programs in the Higher Education Act would be needed to ensure that teachers have the skills to carry out this curriculum redesign effort and to teach effectively.

What Does a Program of Study Look Like: The BUILT ENVIRONMENT

A well conceived program of study would be organized around major industries or broad career opportunities and consist of a rich cluster of academic and technical courses. For example, in contrast to traditional vocational education programs in the building trades (carpentry, masonry, plumbing, and electricity), a high school might offer a program structured around building and environmental design. Such a program could include carpentry and other traditional trades, but it would also emphasize academic and technical knowledge used in architecture, urban planning, construction engineering, interior design, and environmental protection.

This broader programmatic framework has two important advantages over occupationally specific vocational programs. First, it facilitates attention to a much broader range and higher level of academic content. A student's history courses, for example, might explore the role the built environment plays in shaping and reflecting important social, political, and economic trends in different cultures and regions of the world. Second, because this broader framework encourages inclusion of richer academic content, it also holds out to program participants the option of pursuing the full range of postsecondary options. The program, by its design, presumes that participants may likely pursue four-year college or university.

Such a program should not eliminate occupationally specific content from the curriculum. Hands-on experience in construction, especially if it emphasizes application of useful academic knowledge, is equally valuable to prospective carpenters, electricians, urban planners, and architects. Rather than abolish such opportunities for high school students, a comprehensive CTE program of study situates these opportunities in a broader context that helps students to strengthen knowledge and understanding and to make connections to other problems and circumstances.

Career-themed programs of study must provide comprehensive career exploration and guidance and counseling. Students need access to information about careers throughout their elementary and middle school years, but obviously much more so in the high school years. Students and parents will need more guidance and advice to understand the choices as communities and high schools offer more options such as small schools or programs developed around career or other themes. School counselors that are knowledgeable both about careers and college access are needed. Counselors

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and teachers should also help students consider non-traditional careers as part of early career awareness. Efforts to improve guidance and counseling need to recognize that most school guidance counselors have unreasonably large student caseloads and that career counseling often takes a back seat to social and emotional issues and the paper work of getting large numbers of students into college. The system as a whole needs dramatic improvement and a recognition of the key role of guidance and counseling for all students.

Programs of study should encourage students to pursue an associate's or bachelor's degree, but also recognize that some students will both work and go to college on a part-time basis for financial reasons. Partnerships with employers and the community are needed to help provide information about careers and the workplace to students and their parents, and to serve as mentors or advisors and to help relieve the burden on school counselors. Counselors and teachers also should participate in externships with employers to learn more about the workplace, emerging careers, and the application of knowledge to workplace problems.

Employers would play a key role in CTE programs of study as a means of strengthening and ensuring the quality of programs. Employers, as partners, can provide opportunities for internships and work-based learning experiences for students and teachers, serve as mentors, provide input and guidance on curriculum and ensure that it meets industry standards, provide information on emerging technology and careers, and donate equipment and other material to high schools. Employer involvement needs to be continued as students move through the program of study to postsecondary education, where industry input into curriculum and standards becomes much more relevant.

A strong focus of the program of study would be articulation between the high school and postsecondary curriculum and helping students move as efficiently as possible along a college/career pathway. This connection between high school and postsecondary education must become a basic element of all CTE programs and a requirement of receipt of federal funds. Every high school program of study must clearly define the sequence of courses needed to move from high school to postsecondary education and help students know what is needed and when it is needed to advance and when. Curriculum should be designed that spans grades nine through fourteen or sixteen. The emphasis of these efforts is to increase the number of students who graduate from high school and enter postsecondary education without needing remediation. Programs that link with middle schools and four-year institutions of higher education are desired.

This time-intensive process of developing articulated programs requires support to bring secondary and postsecondary communities to the table. It requires a significant investment by the state to develop the infrastructure of the college/career pathways, such as alignment of high school exit exams with college entrance requirements and development of end of course exams for CTE programs of study. And it will require planning and development with instructors from the various grade levels and from academic and occupational disciplines.

Attention and work also need to be focused on developing or implementing models that allow dual enrollment, concurrent enrollment, dual credit or articulation agreements, or other strategies that help students advance more quickly through postsecondary education. Funding should be flexible enough to allow the creation or support of these arrangements that blend learning environments. Models, like early or middle college high schools with a career theme, or online learning or virtual schools, could be supported as well.

Seen as a desirable option in the high school or in the community, CTE programs of study would be open to students of all abilities. Students would not be tracked or assigned to a CTE program of study based on previous history, grades, or other arbitrary selection processes, but rather select a program of study based on their interests. Should students experience difficulty in completing the

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work required by a CTE program of study, or be performing below grade level when they entered, high school officials would have to provide the extra support to allow the student to succeed. Students who may need extra assistance in math, science, or literacy in the ninth and tenth grades should be identified early and given help, but they should be allowed to participate in as much of the career-themed program as possible. Curriculum should ensure the reinforcement of academic standards at the high school level.

Because the curriculum in ninth and tenth grades would be based on a standard core, students could transfer from one CTE program of study to another or other options, based on their interests or their need to access courses in another program of study. With rigorous academic coursework, CTE programs can successfully attract a range of students, including high performing students, who learn better through an applied, contextualized curriculum or who have a strong interest in a particular career area. A more hands-on curriculum makes the material more relevant to students, which will likely increase student engagement and decrease dropouts.

Career and technical student organizations, like the National FFA Organization, DECA, Skills USA VICA, and Health Occupations Students of America, can also help provide extended learning time, help youth develop important skills like leadership, communication and teamwork, and provide linkages between academic and technical work.

The program of study model described above can be seen as a first step in moving a comprehensive high school to smaller learning communities with a career focus. Doing so requires significant change, primarily focused on teaching and learning. Support and professional development need to be provided to academic and occupational instructors, staff, administrators, and counselors at high schools and postsecondary institutions. Parents, business, and industry, and the community as a whole also need to be engaged as part of the comprehensive restructuring and overhaul and revision of the programming.

In summary, funds would be used for the development and support of coherent and focused programs of study organized around a career theme; to support professional development and planning time for teachers and faculty who will develop rigorous, interdisciplinary, integrated, applied curriculum; for career and college guidance and counseling; for building stronger partnerships with employers and opportunities for learning in the community; and to develop sequenced, articulated programs of study leading to postsecondary education and careers, including options for concurrent or dual enrollment.

Funds at the secondary level could not be used to purchase or maintain technology or equipment. The reason for this change is to focus dollars where they are most needed: teaching and learning, professional development, and student supports. Recognizing that equipment is costly and also needed for high quality CTE programs, partnerships with and donations from the private sector should be pursued. Additionally, there are a number of existing federal programs, at various agencies, that provide support to states and school districts to purchase computers and other technology to improve learning. These programs should be expanded to take into account the technology needs of CTE so that there is a more comprehensive strategy for the support of technology and equipment throughout the entire high school and to consider online and virtual learning resources as well. A free-standing program to support the use of technology and equipment in CTE programs of study is also an option.

Quality and Continuous Improvement in Postsecondary CTE and Support of Pathways

Federal funding for CTE at the postsecondary education level should support quality programs and ongoing improvement. The activities necessary to accomplish this are, in many respects, similar to those described at the secondary level. However, because students are more focused on developing technical or occupational skills at the postsecondary level than in high school, CTE pro-

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grams must have a greater connection to the workplace and business practices and processes.

Funding at the postsecondary level should be used to improve the quality of professional development for faculty to increase academic and occupational content knowledge, to develop, in partnership with secondary school colleagues, interdisciplinary, contextualized curriculum, and to develop sequences of courses for programs of study. Under this scenario, a significant amount of the funds would be spent on the development and support of programs of study with pathways in partnership with secondary schools. These must lead to a clear outcome of a certificate or degree, further learning, employment, or other acceptable option (e.g. military service).

Postsecondary CTE programs must ensure labor market responsiveness and alignment with industry-recognized standards. Funding would be used to build and support strong linkages and partnerships with employers and to develop programs responsive to the labor market. Professional development for faculty must include opportunities to keep knowledge and skills current with the needs of business and industry and to understand and be able to demonstrate applications of knowledge, based on workplace needs.

Programs at the postsecondary education level must also provide support services to ensure that students are retained and that they complete their program. Once in college, many students, both young and old, need continued guidance and counseling to ensure that they stay on track and complete their coursework in a timely fashion.

Funds should also be used to better support needy students and connect more effectively with other federal programs, such as the Workforce Investment Act, Adult Education and Family Literacy Act, Temporary Assistance for Needy Families, and Higher Education Act. CTE students who face barriers to learning may need extra help that other programs can provide, such as child care, transportation assistance, flexible classes, or student aid. While the funding for the CTE program of study would be used to improve the overall quality of the programs, one important aspect would be to provide better guidance and counseling at the postsecondary level. By working with needy postsecondary students more closely, colleges could determine if additional help or support is needed to keep students in college and progressing toward a certificate or degree. Other federal programs can then provide support to needy students to ensure they attend regularly and complete their degree or certificate in a timely fashion.

Federal funding at the postsecondary education level could not be used to purchase or maintain technology and equipment, consistent with the restriction at the secondary level. Partnerships with the private sector can help relieve some of the need for equipment.

THE STRATEGY TO BRING ABOUT THIS CHANGE IN CAREER AND TECHNICAL EDUCATION

In reality, a great deal of what we would like to see accomplished could be done today in states and communities with strong, visionary leadership. And this paper is, to a large extent, based on the experiences of state and local leaders around the country who have fashioned rigorous and relevant CTE programs that prepare students both for college and careers. The problem of trying to improve CTE does not necessarily exist in the language of the law; it exists in the way people carry out the intent of the legislation and in their failure to adapt to the changing economic and social needs.

Therefore, this paper presents not only a new vision of how federal funding for CTE should be used, but also proposals about changing the way funding flows and who gets it. It is important to grab people's attention with a different approach. And nothing is more controversial and provocative than changing funding formulas. It is a calculated guess that changing the funding flow will ultimately have a larger impact on bringing about

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change and improvement in CTE programs than tinkering with the current grant program. Of prime importance is the disruption of the entitlement mentality that has existed in many states and school districts that have received Perkins Act funds for years. Federal funds should not be viewed as ongoing maintenance or general operating funds; they must be used to support activities that will lead to the creation, continued improvement, and support of high quality CTE programs of study with improved student outcomes.

Federal Level

There are various ways the federal government can lead a reform effort to bring about change and improvement in CTE. Despite the small percentage of funding from the federal government for CTE, it carries great weight throughout the CTE enterprise and is matched many times over by state funds.

Because the federal government has a critical role to play in leadership and in providing research and information on best practice, an increased amount of the overall appropriation, approximately five percent, is needed at the national level. In the past, the minimal funding for national and discretionary programs has limited what the federal government can do to promote high quality CTE programs and conduct quality evaluations. Funding at the federal level would be used for high leverage activities that would have a positive impact on state and local efforts to improve the quality of their CTE programs, such as:

- Conducting or supporting research and demonstrations to:
  - Develop, in partnership with industry associations, broad career pathways based on in-demand and growing career fields from which state and local levels can choose when crafting CTE programs of study;
  - Determine which CTE approaches are most effective and lead to positive student outcomes;
  - Determine how to best use technology to expand learning opportunities in education institutions and related workplace learning experiences;
  - Identify effective professional development strategies for educators in order for them to gain understanding of the changing needs of the industries and to promote applied learning opportunities for their students;
  - Apply contextual teaching and learning style research to determine how best to develop integrated and contextual curriculum, and when contextual teaching and learning strategies are most effective in promoting student learning;
- Developing new CTE curricula and assessments that, like Advanced Placement and International Baccalaureate, have a national scope or are related to labor market needs (e.g. health, automated manufacturing). Recommended efforts include:
  - Developing curriculum models that integrate or focus on SCANS skills ;[11]
  - Developing curriculum models for broad career pathways identified above, working with industry associations to integrate national industry skills standards;
  - Creating end-of-course CTE exams and/or creating assessments that measure academic and technical skills that integrate industry certification assessments where available;
  - Developing performance-based technical and occupational assessments that align with standardized assessments;
  - Developing credible assessments of employability skills;

11 U.S. Department of Labor. 1991. *What Work Requires of Schools: Secretary's Commission on Achieving Necessary Skills*. Washington, DC: U.S. Department of Labor. This report examined the demands of the workplace and whether our young people are capable of meeting those demands. Specifically, the Commission was directed to advise the Secretary on the level of skills required to enter employment.

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- Monitoring the effectiveness of the system and disseminating best practices that increase the capacity and quality of CTE programs, including activities such as:
  - Identification of effective, research-based CTE programs;
  - Work-based learning experiences that are directly tied to classroom learning;
  - Models of assisting employers in providing high quality work-based learning opportunities;
  - Models integrating high academic standards and industry-valued standards;
  - Competency-based applied learning techniques for use in instruction and curriculum development;
- National data collection; and
- Alignment of federal funding for CTE with other laws, such as No Child Left Behind, Individuals with Disabilities Education Act, Adult Education and Family Literacy Act, the Workforce Investment Act, the Higher Education Act, and Temporary Assistance for Needy Families in the areas of assessments, accountability, pathways for advancement, curriculum, and standards.

Given the cross-state nature of much of this work, the federal government should consider funding a consortium of states to carry out some of the research and development work together.

State Level

States have a very important role to play in leading change in CTE and therefore should receive a meaningful share of the funding. Of the remaining 95 percent that is allotted to the states, at least 20 percent should be reserved for leadership and administrative activities. Some of the leadership activities required to bring about high quality programs of study include development of frameworks for programs of study, curricula development, development of assessments that measure academic and technical skills, alignment of curricula and assessments with state standards and college entrance requirements, and professional development. Many of these activities can best be handled at the state level, rather than by individual schools or school districts, and therefore it makes sense to give the states more resources. The states will also have increased administrative tasks and need more assistance in managing grants under this recommendation.

The existing funding formula for the allocation of funds from the federal government to the states should be maintained. States should also continue to submit plans to the U.S. Department of Education identifying what actions are needed to change and improve CTE programs consistent with the vision presented here. States would continue to have the authority to decide on the split between secondary and postsecondary education programs. Maintenance of effort at the state level would be required.

State leadership activities focused on CTE at the *high school* could include:

- Developing frameworks for career-themed programs of study in partnership with postsecondary education institutions and employers;
- Developing coherence and alignment of curriculum with state standards, demonstrating how CTE will support No Child Left Behind and improve student outcomes;
- Developing CTE curriculum that is integrated with rigorous academics and part of a sequence of courses leading to postsecondary level work;
- Developing technical and end-of-course CTE assessments, which could be performance-based, aligned with No Child Left Behind.
- Developing leadership in CTE at the state and local levels;
- Professional development to increase academ-

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ic and technical content knowledge of teachers, to expand opportunities for educators to experience the workplace through internships, to help teachers teach contextually, and improve teaching effectiveness for special population students. These efforts should be carried out in coordination with teacher training programs under the Higher Education Act and No Child Left Behind;

- Developing programs, policies, or strategies to help students become informed about career choices, including non-traditional careers, and transition from high school CTE to postsecondary CTE, including developing consistent statewide articulation plans and alignment of high school curriculum with college entrance requirements in certain programs of study;
- Developing employer partnerships at the state, regional, or local levels, in connection with postsecondary education to support high quality career programs of study;
- Working with teacher education institutions in the preparation of CTE teachers in coordination with teacher training programs under the Higher Education Act and No Child Left Behind;
- Evaluation and oversight of programs; and
- Alignment of accountability systems.

State leadership activities focused on CTE at the *postsecondary* education level could include:

- Developing frameworks for career-themed programs of study integrating local needs with national pathway models in partnership with secondary education and employers;
- Developing high quality CTE programs responsive to the needs of the labor market;
- Developing leadership in CTE at the state and local levels;
- Professional development to increase academic and technical content knowledge, improve teaching effectiveness for special population students, and ensure relevancy to labor markets;
- Developing programs, policies, or strategies to help students move more effectively from high school CTE to postsecondary CTE, including developing consistent statewide articulation plans and alignment of high school curriculum with college entrance requirements in certain programs of study, as well as to ensure student retention and completion at the postsecondary level;
- Labor market information;
- Developing employer partnerships at the state, regional, or local levels, in connection with secondary education to support high quality career programs of study;
- Evaluation of programs; and
- Alignment of accountability systems.

States will have significant grants management responsibility, with the recommended move toward competitive grants. Obviously, the work to manage a competitive grants program is more labor-intensive than managing a formula grant program. States will need adequate staff, not only to manage the process, but also to help school districts or schools build their capacity in developing high quality programs. States would also have to be sensitive to the needs of small, rural, or poor school districts that may not have full-time grant writers by providing technical assistance to help in the development of proposals. States would have the authority to offer planning grants and would determine the amount allocated for planning grants. Finally, states would be responsible for monitoring the quality of the grants during the grant period. Overall, states have a strong role to play in improving the quality of the CTE enterprise.

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Local Activities to Create Rigorous, Career-themed Programs of Study

States would direct the remainder of the funding, 75 percent of the national allocation, to high schools, area vocational schools, school districts, and postsecondary institutions on a competitive basis. Under this competitive grant approach, schools, school districts, area vocational schools, and postsecondary institutions would have to demonstrate a commitment to high quality CTE programs of study, pathways between the two sectors, and rigorous and relevant coursework in order to receive a grant.

States could determine how much money to allocate to high school programs and postsecondary programs; however, both programs must contain a strong emphasis on building programs of studies that at a minimum are sequenced and articulated from grades 9-14 and provide clear pathways to college and careers. Secondary schools and postsecondary institutions could apply separately for funding, but partnership applications between a secondary and postsecondary partner would receive priority. Grants in the range of $300,000-$500,000 should be considered for a three-year period. Planning grants would be for one year and range from $25,000-$50,000. Grantees could only reapply if they were able to demonstrate improved student outcomes and performance and could make a case for an ongoing need. Grantees would be required to submit disaggregated data on student outcomes for each program year.

States would have the option of concentrating funding on communities or schools with large numbers of low income, limited English proficient, or otherwise needy students or based on low student achievement. (Or this could be made a legislative mandate at the federal level as a way to target funding.)

Grants would be competitive, with a number of requirements, which are listed below. Local secondary grantees (school districts, secondary schools, and area vocational schools) would have flexibility in the use of funds, as long as the following program elements were included:

- Rigorous, integrated, and sequenced CTE curriculum aligned with state academic standards;
- Professional development based on the needs of the teachers to provide high quality, academically rigorous, integrated curricula and contextualized teaching and learning opportunities and for students with diverse needs and backgrounds;
- Presence of qualified teachers in both academic and technical fields;
- Creation of various career-themed programs of study, small schools, or early or middle college high school, integrating local needs with national pathway models and state frameworks;
- Career guidance and counseling by school officials and/or supplemented by employer/community partnerships throughout high school to ensure early college and career preparation, to provide information about nontraditional careers, and to ensure the attainment of a certificate or degree at the postsecondary level;
- Partnerships with employers and community organizations to allow access to work-based learning, service learning, or other learning opportunities in the community, to serve as mentors, and to ensure relevancy and validity of the program of study to the labor market and labor market needs;
- Pathways that help students transition and move from high school to postsecondary education, by aligning high school curriculum with college entrance requirements, allowing dual or concurrent enrollment, and sequencing curriculum; and
- Data collection, disaggregated by race and income, and program evaluation based on the accountability measures described below.

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Postsecondary education institutions would have to include the following required elements:

- Rigorous, integrated, and sequenced curriculum aligned with industry standards;
- Professional development based on the needs of the faculty to provide high quality, integrated curricula and contextualized teaching and learning opportunities, current with industry standards, and for students with diverse needs and backgrounds;
- Ongoing career guidance and follow-up supports with students to ensure retention through the program and attainment of a certificate or degree at the postsecondary level;
- Partnerships with employers and community organizations to allow access to work-based learning, service learning, or other learning opportunities in the community, to serve as mentors, and to ensure relevancy and validity of the program of study to the labor market and labor market needs;
- Pathways that help students transition and move from high school to postsecondary education, by aligning high school curriculum with college entrance requirements, allowing dual, concurrent enrollment, or early and middle college high schools, and sequencing curriculum;
- Creating stronger links with other programs that serve needy adult students, such as the Workforce Investment Act, the Temporary Assistance for Needy Families, Adult Education and Family Literacy Act, and the Higher Education Act. Preference would be given to local sites that leverage funds from these other programs to support student retention and program completion; and
- Data collection, disaggregated by race and income, and program evaluation, based on the accountability measures described below.

This competitive grant approach would provide programs with a great deal of latitude in how they choose to design programs of study, but the programs of study must be comprehensive and holistic in design and implementation. Schools and colleges could offer opportunities for learning in a wide range of community organizations and with employers; create small schools or programs of choice centered around a CTE program of study; focus programs on needy students or neighborhoods; create proficiency-based models that allow students to advance based on their ability, including early or middle college high schools; access on-line learning; link two-year postsecondary CTE programs of study to baccalaureate and graduate programs where appropriate; support students pursuing non-traditional careers; and support career and technical student organizations.

Accountability

Holding states and communities accountable for their performance with regard to CTE programs is essential. The No Child Left Behind Act has provided the states with an important tool to create an accountability structure at the secondary level, and Workforce Investment Act, Adult Education and Family Literacy Act, and Temporary Assistance for Needy Families have set up a structure for adult programs. In addition, the Common Measures for Workforce Development Programs being developed by the U.S Office of Management and Budget provide another important framework for coordinating accountability efforts. The programs of study described in this paper would be a part of these existing accountability mechanisms.

At the secondary level, outcomes would be linked to No Child Left Behind and the requirement for increased student achievement in core subjects, but other measures, such as reduced dropout rates, entry into postsecondary education, and attainment of technical and occupational competencies would also be measured. Schools or districts could use proficiency-based, end-of-program technical assessments that have been developed or approved by the state to help determine this.

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At the postsecondary level, the OMB measures of entered employment, retention in employment, and earnings increase should be supplemented by entry into further education and training or the military, and attainment of degree or industry-recognized certification or credentials. It should be noted that many students at the postsecondary education level work while they are in school, making the percentage changes in entered employment and earnings much smaller, and this needs to be taken into consideration. Using Unemployment Insurance records to track both education (in connection with the state system of higher education) and employment should be encouraged.

Grantees would be required to disaggregate data by race and income to determine how students in those programs compare to students in any other program.

The competitive grant process would also add another level of accountability. State officials would review the applications, which could be supplemented by a peer-review process. Following the first round of grants, any recipient that wanted to reapply would have to demonstrate improved student outcomes under the accountability systems described above. The state, as part of its management process, would also establish an annual review to monitor the quality of program implementation.

CLOSING

Some may argue that this proposal does not go far enough to change vocational education. While not as dramatic as some may wish, this paper presents a vision for positive and meaningful change. From our work in high school reform and workforce development, we believe that CTE is very much needed in communities for the reasons outlined earlier. But CTE is also needed as an option for youth based on their future interests and to keep them engaged and interested in school, especially in light of the pressure from standards-based reform. CTE has a legitimate and needed role to play in high school.

Several of the changes suggested here, such as disallowing equipment and moving to a competitive-based funding approach, are major and will cause great consternation and opposition by many. It is not our intent to cause disruption in the system or upset those that work in CTE. Rather it is a desire to see the CTE enterprise become a highly respected and high quality program of choice for American adolescents.

FINAL WORDS ON HIGH SCHOOL REFORM

Leaving no child behind in school is an enormous challenge the country has just recently undertaken. The promise of the education reform efforts which began in the 1990's and have carried into the early 21st Century has yet to be fully realized for all students. The No Child Left Behind Act continues to support the promise of closing the achievement gap, creating opportunities for the alignment of other federal Acts with the common goals of increased graduation rates, effective transitions into postsecondary experiences, and the attainment of industry-recognized credentials and postsecondary degrees. The ultimate success of these efforts will be measured by the evidence of a well-prepared workforce and citizenry, a revitalized national economy, and global competitiveness.

The federal investment that has been made in high schools and in Career and Technical Education in particular is minor compared to the funding that has been allocated to Title I and other education programs. Yet, high schools are expected to graduate students to high standards, despite the fact that many students enter high school with reading and math skills far below grade level, not to mention other social and family issues. If funding for CTE is not likely to increase, then it is incumbent upon policymakers to determine how other federal programs that provide money to support young people can be better aligned with efforts to improve high school graduation and access to college. The newly formed White House Task Force for Disadvantaged Youth may provide this needed policy review.

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The Higher Education Act is an example of where policies need greater alignment with preK-16 reform. Billions of dollars have been spent on student aid for students who are not adequately prepared for postsecondary education or who drop out of college without completing a certificate or degree. Policies and programs must provide the supports and pathways for all students to successfully complete high school and obtain some postsecondary education, without remediation. Also, more interventions to help students succeed in postsecondary studies, such as increased guidance and counseling, and more follow-up with at-risk students, may be a good use of resources. We need to look across programs to ensure a focus on the transitional periods for young people and providing supports across institutions and education sectors.

The ideas contained in this paper can help form the basis for a positive, successful, and rigorous high school experience for any youth, in any high school. While the focus here has been on CTE programs of study, that concept can easily be expanded to many other disciplines and interest areas. As the country continues to discuss high school reform, CTE should be recognized for the reforms it has already brought forth and viewed as a key strategy to continue to improve the teaching and learning for America's high school students.

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Participants in the Discussion of the Future of Career and Technical Education

2001-2003

The following individuals attended at least one (and often more) of the six meetings held to discuss the future of career and technical education or provided significant oral or written comments. Their participation and input helped to inform this paper.

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Recommended Reading

American Youth Policy Forum. 2000. *High Schools of the Millennium: Report of the Workgroup.* Washington, DC: American Youth Policy Forum.

Barton, Paul E. 1999. *What Jobs Require: Literacy, Education, and Training, 1940-2006.* Princeton, NJ: Educational Testing Service.

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Meier, Deborah. 2002. *In Schools We Trust: Creating Communities of Learning in an Era of Testing and Standardization.* Boston: Beacon Press.

National Association of Secondary School Principals. 1996. *Breaking Ranks: Changing an American Institution.* Reston, VA: National Association of Secondary School Principals.

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Steinberg, Adria, Cheryl Almeida with Lili Allen and Sue Goldberger. 2002. *From the Margins to the Mainstream: Effective Learning Environments for Urban Youth.* Boston, MA: Jobs for the Future.

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AMERICAN YOUTH POLICY FORUM PUBLICATIONS

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High Schools of the Millennium: A Report of the Workgroup
This report argues for a new vision of high school, one that uses all the resources of the community to create smaller learning environments, to engage youth in their striving for high academic achievement, to support them with mentors and role models, and to provide them with opportunities to develop their civic, social, and career skills.
50 pages **only available online**

Finding Common Ground: Service-Learning and Education Reform, *by Sarah Pearson*
Reveals areas of compatibility between leading Comprehensive School Reform (CSR) programs and key elements of service-learning. Report reveals most CSR models provide opportunities for students to apply their knowledge and skills to real-life situations, address local community issues and interests, and develop civic skills and competencies.
137 pages **$10**

Do You Know the GOOD NEWS About American Education?
This booklet highlights major improvements in American public education since the early 1980s. Solid evidence is presented in a straightforward way that can dispel widely-held misconceptions about public schools. Also, honestly addresses the work that remains to be done in schools to achieve academic excellence for all. (Co-published with the Center for Education Policy).
32 pages **$2**

Looking Forward: School-to-Work Principles and Strategies for Sustainability
This report offers Ten Essential Principles to assist policymakers, practitioners, and the community to sustain successful school-to-work approaches. These principles represent a distillation of critical elements of the School-to-Work Opportunities Act used by the field in: improving the school experience for young people; expanding and improving work-based learning opportunities; and building and sustaining public/private partnerships. The report identifies a variety of federal legislation and national programs that could support these gains.
52 pages **$4**

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Raising Minority Academic Achievement: A Compendium of Educational Programs and Practices, *Donna Walker James, editor*

An accessible resource for policymakers and practitioners interested in improving the academic success of racial and ethnic minorities from early childhood through postsecondary study. The report provides strategies used in successful programs and recommendations to the field. Includes summaries of evaluations of 38 school and youth programs with data on minority academic achievement.

206 pages **$10**

MORE Things That DO Make a Difference for Youth, Vol. II, *Donna Walker James, editor*

A compendium of more evaluations of youth programs. Summarizes 64 evaluations of career academies, school-to-work, Tech Prep, school reform, juvenile justice and related areas of youth policy.

194 pages **$10**

Some Things DO Make a Difference for Youth: A Compendium of Evaluations of Youth Programs and Practices, *Donna Walker James, editor*

This guide summarizes 69 evaluations of youth interventions involving education, employment and training, mentoring, service-learning and youth development. Suggests effective strategies for supporting our nation's youth, particularly disadvantaged young people.

196 pages **$10**

The Forgotten Half Revisited: American Youth and Young Families, 1988-2008, *by Samuel Halperin, editor*

A ten-year update of the report of the William T. Grant Foundation Commission on Work, Family and Citizenship. Includes essays and the latest data on a range of topics—employment, youth and community development, school reform, higher education, service—by a number of the nation's leading scholars and youth policy advocates. Essayists include: Thomas Bailey (Teachers College, Columbia University), Martin Blank (Institute for Educational Leadership), Carol Emig (Child Trends), Lawrence Gladieux and Watson Scott Swail (The College Board), Samuel Halperin (American Youth Policy Forum), Harold Howe II (former U.S. Commissioner of Education), John F. Jennings and Diane Stark Rentner (Center on Education Policy), Karen Pittman (International Youth Foundation), Shirley Sagawa (The White House) and Daniel Yankelovich (Public Agenda).

200 pages **$15**

Guide to the Powerless—and Those Who Don't Know Their Own Power, *by Samuel Halperin*

Acquire essential political skills to engage both elected and appointed officials at all levels of government. This guide is a perfect introduction to effective citizenship for community leaders, educators, students, youth workers and other human service providers. Recommended by policymakers.

60 pages **$5**

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